WHAT IS CLAIMED IS:

- 1. A protein having a labeling compound attached to its C-terminal, in which said compound comprises a label portion comprising a label substance and an acceptor portion comprising a compound having an ability of binding to a C-terminal of a synthesized protein when protein synthesis is carried out in a cell-free protein synthesis system or in a living cell.
- 2. The protein according to claim 1, wherein said label portion comprises a radioactive substance or a non-radioactive label substance.
- 3. The protein according to claim 1, wherein said acceptor portion comprises a nucleic acid derivative.
- 4. The protein according to claim 1, wherein said acceptor portion comprises a compound in which a nucleic acid and an amino acid or an amino acid derivative are bound to each other.
- 5. The protein according to claim 1, wherein said acceptor portion comprises a compound in which 2'- or 3'-aminoadenosine or its derivative and an amino acid or an amino acid derivative are bound to each other.
- 6. The protein according to claim 1, wherein said acceptor portion comprises puromycin or its derivative.
- 7. A method for producing the protein as defined in claim 1, comprising the step of carrying out

synthesis of a protein in a cell-free protein
synthesis system or in a living cell in the presence
of a labeling compound comprising a label portion
comprising a label substance and an acceptor portion
comprising a compound having an ability of binding to
a C-terminal of a synthesized protein when protein
synthesis is carried out in the cell-free protein
synthesis system or in the living cell, said labeling
compound being present at a concentration effective
for said labeling compound to bind to the C-terminal
of the synthesized protein.

- 8. A labeling compound for labeling a protein, comprising a label portion comprising a label substance and an acceptor portion comprising a compound having an ability of binding to a C-terminal of a synthesized protein when protein synthesis is carried out in a cell-free protein synthesis system or in a living cell.
- 9. A method for analyzing a function of a gene, comprising the steps of:

adding a nucleic acid containing the gene to a cell-free protein synthesis system as a template; and

carrying out protein synthesis in the presence of a labeling compound comprising a label portion comprising a label substance and an acceptor portion comprising a compound having an ability of binding to a C-terminal of a synthesized protein when protein

synthesis is carried out in a cell-free protein synthesis system or in a living cell to obtain a protein having the labeling compound attached to the C-terminal of the protein, said labeling compound being present at a concentration effective for said labeling compound to bind to the C-terminal of the synthesized protein; and

analyzing a function of the labeled protein.

- 10. The method according to claim 9, wherein said analysis of the function of protein comprises determination of a protein-protein interaction.
- 11. The method according to claim 9, wherein said analysis of the function of protein comprises determination of a protein-nucleic acid interaction.
- 12. The method according to claim 9, wherein said analysis of the function of protein comprises determination of an interaction between a protein and a ligand capable of specifically binding to the protein.